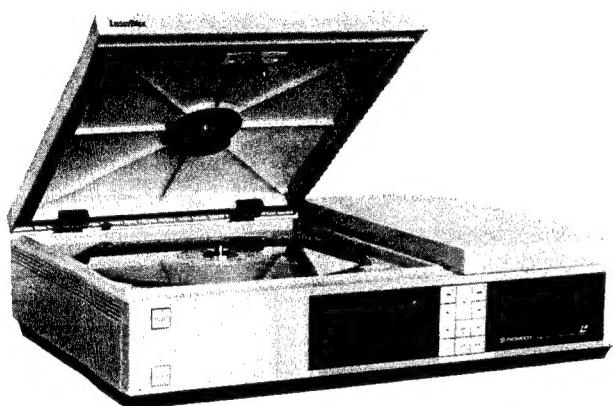


Operating Instructions

VIDEO DISC PLAYER *LaserDisc*™ LD-660

KU
S
S/G



This set is for exclusive use with NTSC color system, please use only NTSC video discs with the universally standardized Laser Vision symbol.

Read the operating instructions carefully to be sure all connections have been made properly and obtain all the benefits of this player.

These operating instructions are based on the model KU, and they can be used for the model S, S/G.

The differences between the models are given below.

POWER REQUIREMENTS

LD-660/KU ('KU' printed on packing case):

120VAC, 60Hz

LD-660/S, S/G ('S' or 'S/G' printed on packing case):

110, 120, 220, 240VAC (switchable), 50/60Hz

NOTE (FOR MODEL S, S/G)

Read through the section on the VOLTAGE SELECTOR SWITCH (page 8) before using your player and check that the voltage selector switch is set correctly for use in your area.

Keep the operating instructions in a safe place. Then you will know exactly where it is in case you wish to refer to it.

IMPORTANT NOTICE

The serial number for this equipment is located on the rear panel. Please write this serial number on your enclosed warranty card and keep in a secure area. This is for your security. (For model KU)

Caution; Use of controls or adjustments or performance of procedures other than those specified here-in may result in hazardous radiation exposure.

WARNING: TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

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SAFETY INSTRUCTIONS [FOR MODEL KU]

READ INSTRUCTIONS — All the safety and operating instructions should be read before the appliance is operated.

RETAIN INSTRUCTIONS — The operating instructions should be retained for future reference.

HEED WARNING — All warnings on the appliance and in the operating instructions should be adhered to.

FOLLOW INSTRUCTIONS — All operating and use instructions should be followed.

WATER AND MOISTURE

- The appliance should not be used near water — for example, near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool, etc.
- Do not handle the power cord with wet hands. This is extremely dangerous because you may get an electric shock.
- Moisture forms in the operating sections of the appliance and the appliance's performance will be impaired if the appliance is brought from cool surroundings into a warm room or if the temperature of the room rises suddenly. To prevent impairing performance, let the appliance stand in its new surroundings for about an hour before switching it on, or ensure that the room temperature rises gradually.

LOCATION — The appliance should be installed in a stable location.

VENTILATION — The appliance should be situated so that its location or position does not interfere with its proper ventilation. For example, the appliance should not be situated on a bed, sofa, rug, or similar surface that may block the ventilation openings.

HEAT — The appliance should be situated away from heat sources such as radiators, heat registers, stoves, or other appliances (including amplifiers) that produce heat.

POWER SOURCES — The appliance should be connected to a power supply only of the type described in the operating instructions or as marked on the appliance.

GROUNDING — The precautions that should be taken so that the grounding of an appliance is not defeated.

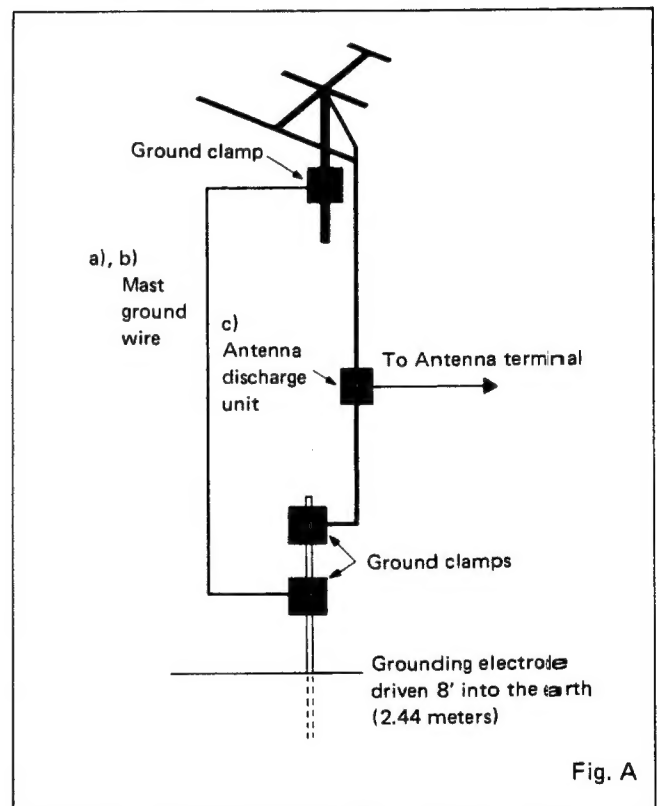
POWER-CORD PROTECTION

- Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the appliance.
- Always take hold of the plug to unplug it from the power outlet; do not unplug it by pulling on the cord. The cord may be damaged if you keep pulling on it.

POWER LINES — An outdoor antenna should be located away from power lines.

OUTDOOR ANTENNA GROUNDING — If an outside antenna is connected to the antenna terminal, be sure the antenna system is grounded so as to provide some protection against voltage surges and built up static charges. Section 810 of the National Electrical Code, ANSI/NEPA No. 70-1978, provides information with respect to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna-discharge unit, connection to grounding electrodes, and requirements for the grounding electrode. See Fig. A.

EXAMPLE OF ANTENNA GROUNDING AS
PER NATIONAL ELECTRICAL CODE INSTRUCTIONS



- Fig. A
- Use No. 10 AWG copper or No. 8 AWG aluminum or No. 17 AWG copper-clad steel or bronze wire, or larger as ground wires for both mast and lead-in.
 - Secure lead-in wire from antenna to antenna discharge unit and mast ground wire to house with stand-off insulators, spaced from 4 feet (1.22 meters) to 6 feet (1.83 meters) apart.
 - Mount antenna discharge unit as closely, as possible to where lead-in enters house.

NONUSE PERIODS — The power cord of the appliance should be unplugged from the outlet when left unused for a long period of time.

OBJECT AND LIQUID ENTRY — Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.

SERVICING — The user should not attempt to service the appliance beyond that described in the operating instructions. All other servicing should be contacted nearest Pioneer authorized service center.

DAMAGE REQUIRING SERVICE — The appliance should be serviced by Pioneer authorized service center or qualified service personnel when:

- The power-supply cord or the plug has been damaged; or
- Objects have fallen, or liquid has been spilled into the appliance; or
- The appliance has been exposed to rain; or
- The appliance does not appear to operate normally or exhibits a marked change in performance; or
- The appliance has been dropped, or the enclosure damaged.

NOTICE

The following warning labels appear on the bottom of your videodisc player. The warnings contained on these labels should be strictly adhered to:

CAUTION

TO PREVENT ELECTRIC SHOCK, DO NOT REMOVE COVER.
NO USER-SERVICEABLE PARTS INSIDE. PILOT LAMP
SOLDERED IN PLACE. REFER SERVICING TO QUALIFIED
SERVICE PERSONNEL.

<VRW-050>

DANGER
LASER RADIATION WHEN OPEN
AVOID DIRECT EXPOSURE TO BEAM
CAUTION
HAZARDOUS ELECTROMAGNETIC
RADIATION WHEN OPEN

Federal law requires the following warnings:

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

FEATURES

Non-contact pickup system

This system uses a low-powered laser to detect the information recorded on the video disc. There is no physical contact between the pickup and the video disc itself, so called "noncontact pickup system". This laser, while in operation, projects a continuous beam of light onto the disc on an area measuring no more than one micron in diameter. Information on the video disc is stored in the form of microscopic pits which are laid down in a spiral track on a light reflected surface. When the laser beam strikes a series of pits, it is reflected into the system and the variation of the reflected light is converted into the reproduced signal.

Unlike an ordinary phonograph record or other video disc systems, there is no abrasion and no wear on the disc or pickup. Even if there are fingerprints or dust on the video disc surface, this will not usually interfere with reproduction of picture or audio because the laser beam is focused on about 1.2 mm beneath the transparent acrylic surface. In other words, the recorded information surface is not exposed, so video disc handling is easy and requires no special care.

Both standard play (CAV) and extended play (CLV) video discs can be played, and LD-660 automatically detects these video discs and plays accordingly.

The standard play disc, also known as the CAV or constant angular velocity disc, spins at the same, constant speed of 1,800 rpm from the inner circumference to the outer circumference and provides a maximum of 30 minutes playing time per side.

On the CAV disc, one video picture frame is recorded for each revolution, so a number of additional performance features are possible.

Although the extended play disc, also known as the CLV or constant linear velocity disc, does not offer such additional features, it does have a maximum playing time of one hour per side since the rotational speed continuously varies from 1,800 rpm at the inner circumference to 600 rpm at the outer circumference.

High fidelity stereo sound

Beside the video signal, audio is recorded in the form of two separate FM signals. Therefore, stereo or bilingual reproduction is also possible.

Audio frequency response is 40Hz - 20kHz, signal-to-noise ratio is 60dB (CX ON; 70dB) or more, and total harmonic distortion is 0.3% or less, making this high fidelity stereo source comparable with conventional phonograph records or FM broadcasts. Although connection to an ordinary television set is all that is required for normal video and audio reproduction, we recommend that a hi-fi stereo system, one from Pioneer, for example, is used to take full advantage of the hi-fi sound quality of the video disc.

Built-in computer control provides multiple performance features and easy operation.

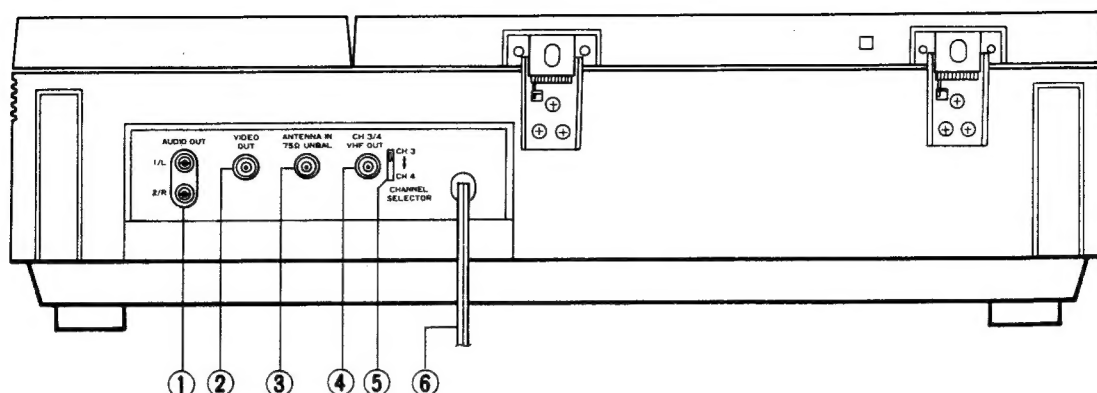
From the inner to the outer circumference, the video disc has a maximum of 54,000 "tracks" in a continuous spiral pattern. On the standard play (CAV) disc, the signal for one video picture frame is recorded on one track covering one full revolution. Thanks to microcomputer control, a single frame can be played repeatedly to provide a still picture, each frame can be played several times for slow motion, and tracks can be skipped for scan-forward or reverse reproduction. Such complex operations are remarkably easy, as will be apparent when you operate the video disc player.

CX noise reduction system

The CX noise reduction system serves to cut down noise by about 10dB or more without compromising the frequency response. It serves to expand the dynamic range and enable reproducing the sounds with a good signal-to-noise ratio.

REAR PANEL FACILITIES

[MODEL KU]



[MODEL S, S/G]

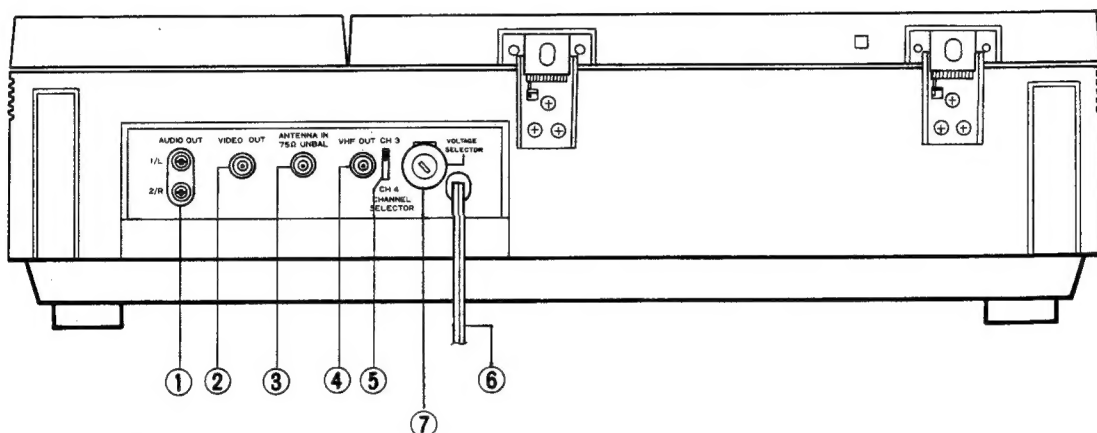


Fig. 1 Rear panel facilities

① AUDIO OUT

These jacks provide the left and right channel audio signals for connection to a stereo hi-fi system.

② VIDEO OUT

This terminal is only for connection to a color video monitor TV (that has a video input terminal). It provide the direct video signal. This terminal is not for conventional TV set.

③ ANTENNA IN 75 OHM UNBAL.

If your VHF antenna cable is a 75 ohm coaxial cable type, connect it to this terminal. If your VHF antenna cable is a 300 ohm twin-lead feeder type, connect it to this terminal through the furnished antenna adapter.

④ CH.3/4 VHF OUT

This terminal provides audio and video signals which are converted to VHF channel 3 or channel 4 by the built-in VHF converter. Set the CHANNEL SELECTOR to the open channel that you will use to recieve the video disc signal on your TV set. We suggest also that you connect your

VHF antenna lead directly to the ANTENNA IN terminal on the player. This will allow automatic switching between video disc playback and regular TV reception. When you turn on the player, the video disc signal will be sent to your TV set, and when you turn off the player, TV (VHF) broadcasts will be received.

⑤ VHF CHANNEL SELECTOR

This slide switch is for selecting a VHF output channel. It has been set to channel 3 at the factory but can be changed to channel 4. Set to the channel which is not used for commercial TV broadcasts in your area.

⑥ POWER CORD

Plug this into a wall socket.

⑦ VOLTAGE SELECTOR (Model S, S/G)

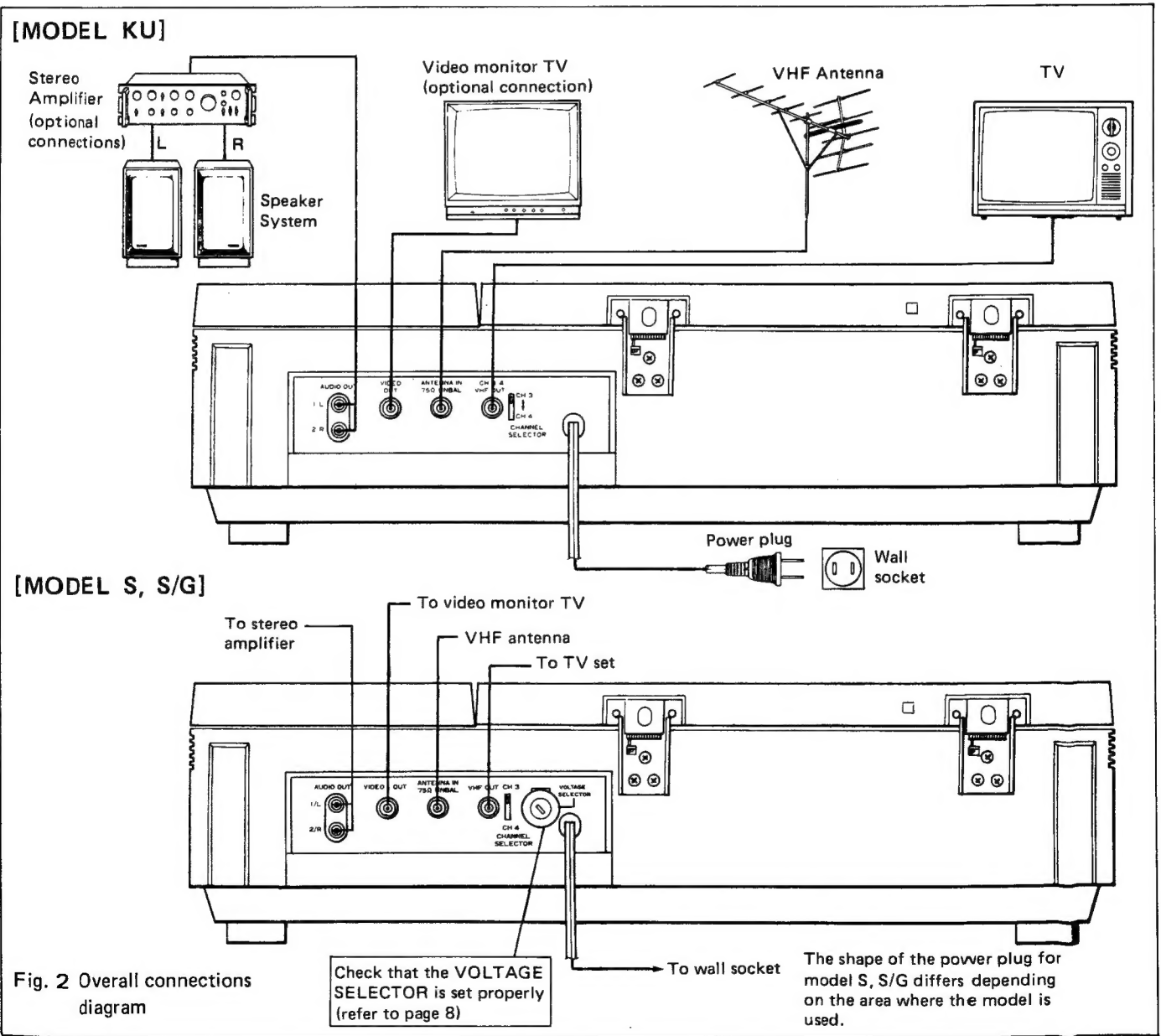
Used to change the operating voltage of the player. Set the selector to the line voltage in your area. (Refer to page 8)

INSTALLATION PRECAUTIONS

Place the player in a stable location near your TV set.
 In order to ensure long-term optimum performance, do not place the player in the following locations:

Locations to be avoided	Detrimental effects
<ul style="list-style-type: none"> • In direct sunlight, near radiators or other sources of heat. • Poor ventilated, humid or dusty locations. • On unstable supports that are not level or subject to vibration. • Locations where alcohols, insect spray or flammable material is used or stored. 	<ul style="list-style-type: none"> • Accumulated effects of internal and external heat can reduce thermal dissipation efficiency of the player and lead to component deterioration. In some cases heating may also prevent stable operation. • Can cause faulty connection or corrosion of input and output terminals. Humidity and moisture in particular may reduce insulation performance and lead to current leakage or component overheating. • May adversely affect precision circuit components. Weight can also pose a hazard in regions subject to seismic activity. • In addition to the fire hazard, some materials may contribute to corrosion or mar the finish of equipment.

CONNECTIONS

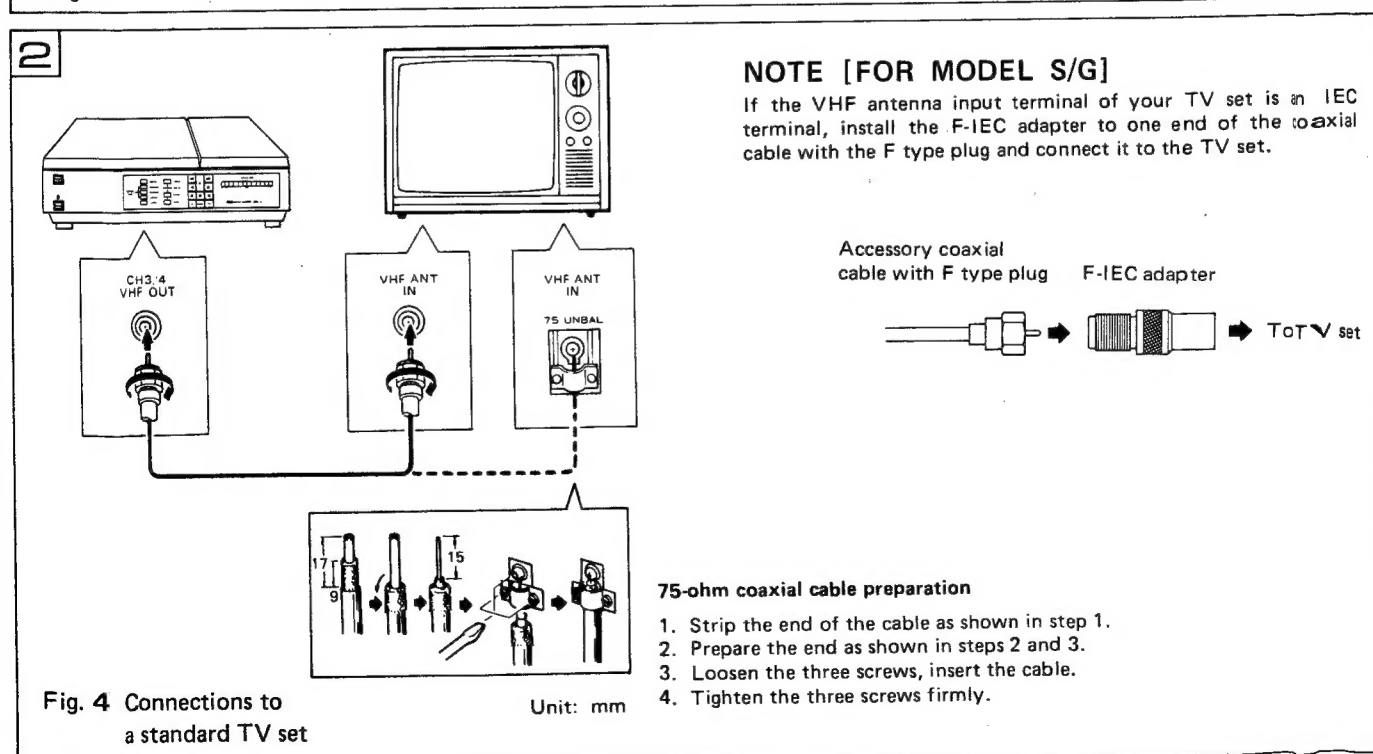
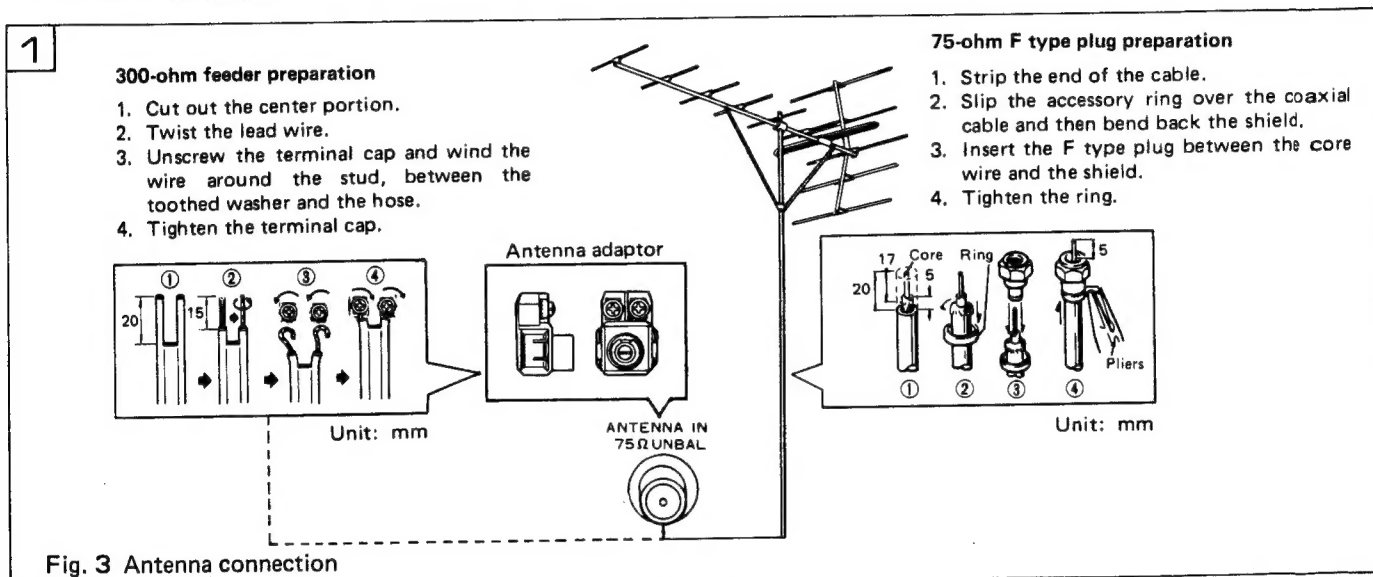


NOTE:

Leave the player and TV set unplugged while connections are being made.

1. Remove your VHF antenna cable from the VHF antenna terminal(s) on your TV set, and connect the cable to the ANTENNA IN terminal on the player. For coaxial antenna cable (75 ohm), an F type plug must be fitted to the end of the cable, as shown in fig. 3. For twin-lead feeder antenna cable (300 ohm), first prepare the wire leads as shown in fig. 3, and connect to the 300 ohm terminals of the furnished antenna adaptor, then connect the antenna adaptor (F type plug) to the ANTENNA IN terminal on the player.

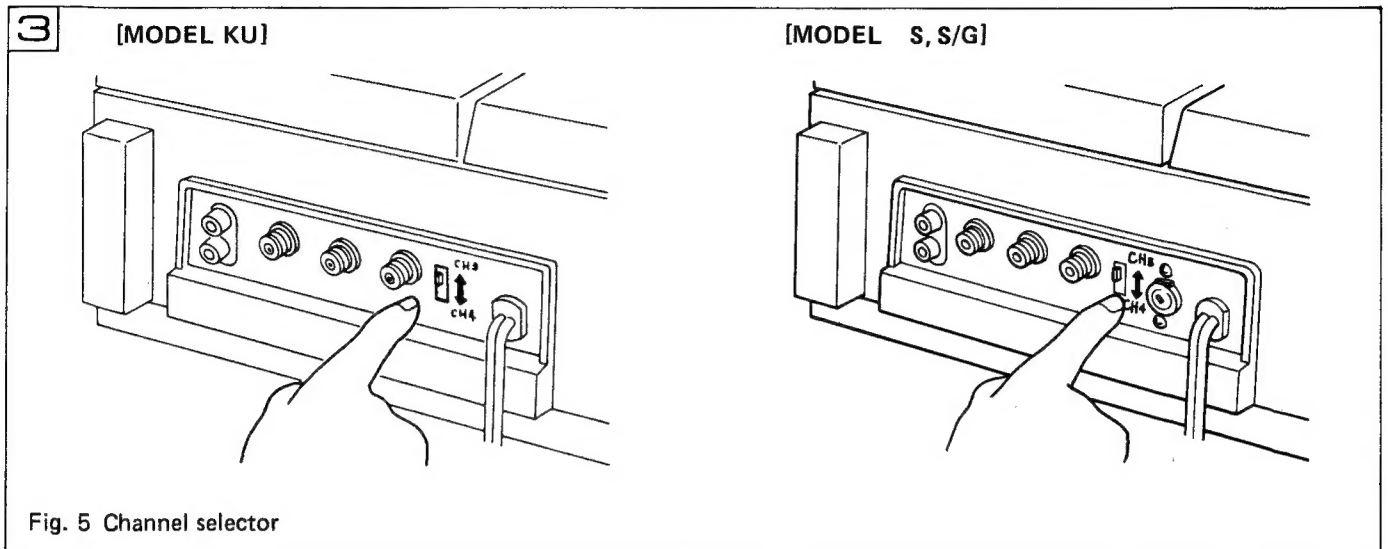
2. An accessory cable with F type plugs at both ends is supplied with the player. Connect one end of this cable to the VHF OUT terminal on the player, and connect the other end to the VHF ANT IN (75 ohm, unbal., F type jack) terminal on your TV set. If your TV has no F type VHF ANT IN terminal, prepare the end of the cable as shown in fig. 4. If your TV has no 75 ohm antenna terminal, purchase a 75 ohm (F type jack)-to-300 ohm adapter and connect the cable to the adapter (75 ohm terminal). Then connect the adapter's twin-lead feeder to the TV's VHF IN (300 ohm balanced) antenna terminals.



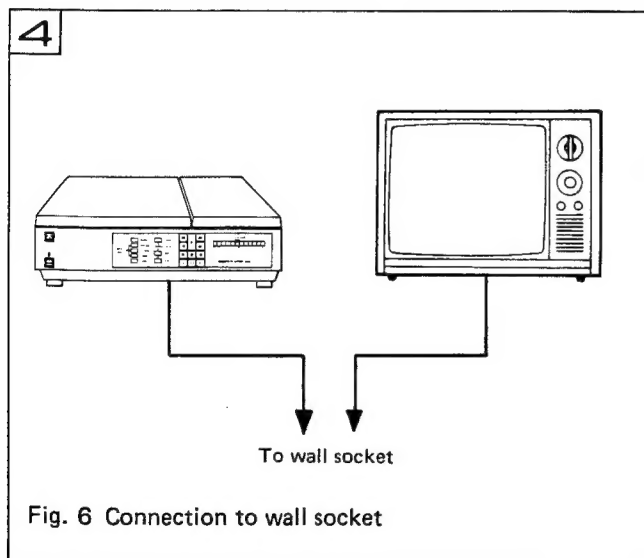
CONNECTIONS

3. Next, set VHF CHANNEL SELECTOR on the player to channel 3 or 4, whichever is not used for commercial TV

broadcast in your area as shown in fig. 5. Then set your TV to the same channel accordingly.



4. Plug AC power cord of the player into a standard wall socket. This completes the standard connection procedure for video and audio reproduction through your TV.



IMPORTANT [FOR MODEL S, S/G]

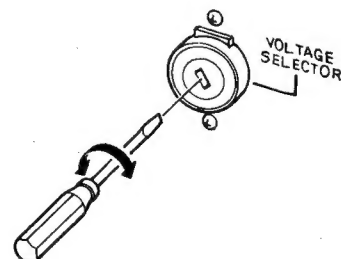
VOLTAGE SELECTOR SWITCH

You will find the voltage selector switch on the rear panel.

Before your player is shipped from the factory, the switch is set to the power requirements of the player's destination; nevertheless, you should check that it is set properly before plugging the power plug into the socket. If the voltage is not properly set or if you move to an area where the voltage requirements differ, adjust the voltage selector switch as follows:

1. Disconnect the power plug.
2. Provide yourself with a medium-sized (flat blade) screwdriver. Insert the tip of the screwdriver into the groove of the voltage selector switch and turn it to the voltage indication corresponding to the line voltage of your residence.

You can tell when it clicks into place.

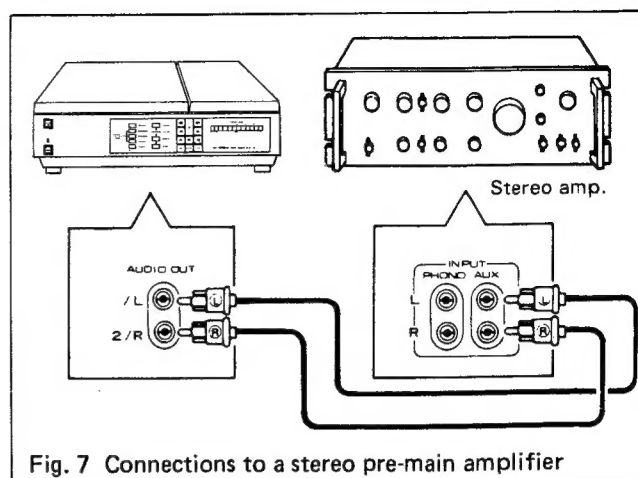


OPTIONAL CONNECTIONS

1. Stereo amplifier

The player can reproduce two channel stereo hi-fi signals from video discs. To take full advantage of this capability, use the two audio connection cords to connect AUDIO OUT jacks on the player to the left and right channel AUX input (or tuner input) jacks on your stereo amplifier or receiver.

Place the TV set (to which you have the cable connected) between the stereo speakers and shut off the TV set's volume control for best results.

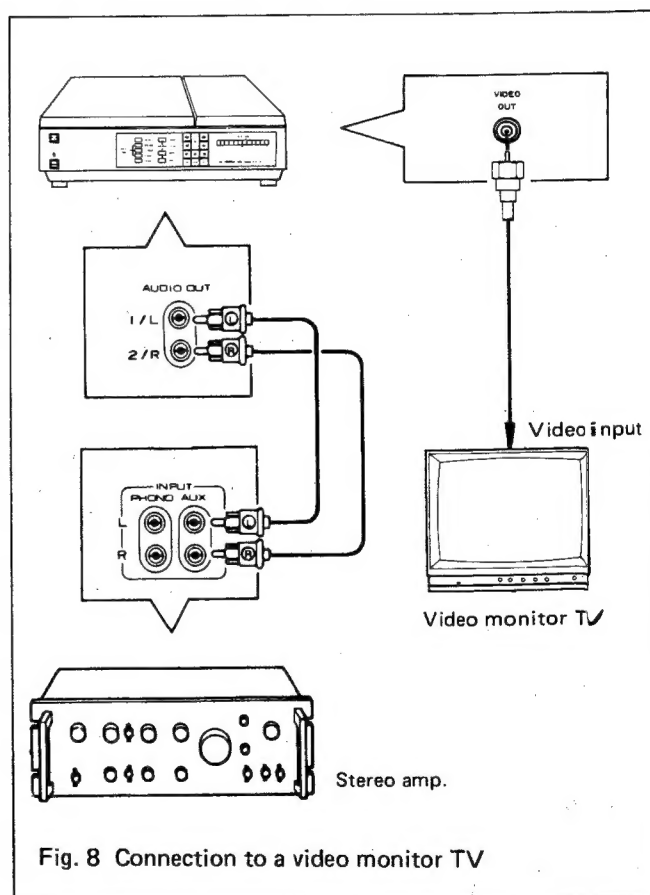


2. Video monitor TV

If you are using a video monitor TV (equipped with a video input terminal), use the accessory coaxial cable to connect VIDEO OUT terminal on the player to video input terminal on the monitor TV (terminated video input terminal). In this case, audio outputs on the player must be connected to audio inputs of the monitor TV or to a stereo system for audio reproduction. (Refer to Fig. 8)

NOTE:

The video input terminal on the monitor TV in use may differ from an F type jack. In this case, exchange the plug at one end of the coaxial cord to a fitting one.



PANEL FACILITIES

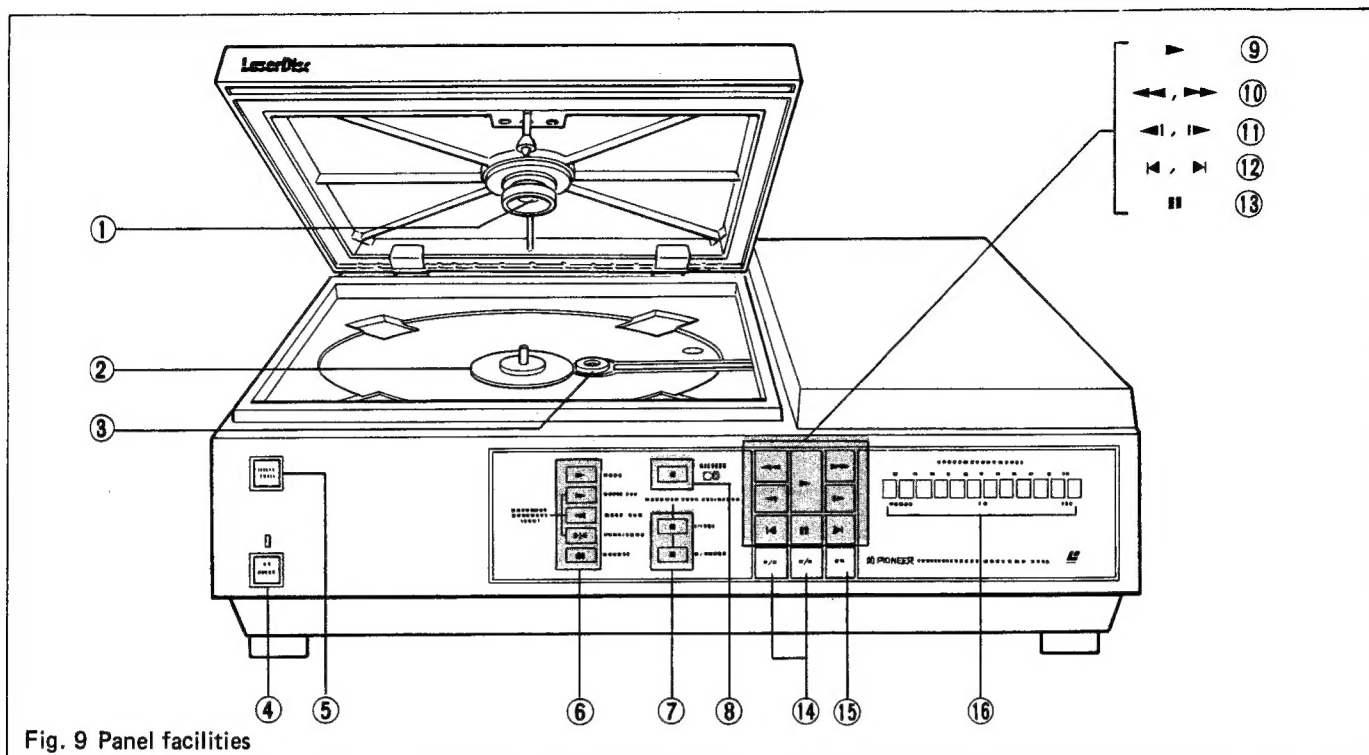


Fig. 9 Panel facilities

① DISC CLAMP

When you close the lid, the magnetic clamp holds the disc on the spindle automatically to ensure stable rotation.

② TURNTABLE

Place the video disc over this turntable. The turntable is coupled directly to the motor which rotates the disc at the proper speed.

③ OBJECTIVE LENS

This is the key part of the player that "reads" the signals recorded on the video disc. Note that the lens surface must be kept clean in order to maintain optimum performance. Always avoid exposing the lens to dust and dirt.

④ POWER

Press this switch to turn the power on and off. The red indicator above the switch lights up when the power is on.

⑤ REJECT/OPEN

Press this button to cut off the operation and to open the lid.

⑥ PLAYBACK MODE INDICATORS

An indicator which corresponds to the playback mode lights up.

⑦ AUDIO INDICATORS

A red indicator which corresponds to the playback audio mode lights up.

⑧ CX SYSTEM INDICATOR

This lights up when the CX noise reduction system is set to on.

⑨ PLAY (▶)

To begin playing a video disc or resume play after other playback mode reproduction, press this button.

⑩ SCAN (◀◀ , ▶▶)

Use these buttons to quickly locate a specific part of the program that you want to see.

⑪ SLOW (◀◀ , ▶▶)

These buttons are used for slow motion video reproduction. Press the right side buttons for slow forward play, press the left side buttons for slow reverse play.

⑫ STILL/STEP (◀◀ , ▶▶)

These are used for single frame play and frame-by-frame play.

⑬ PAUSE (■■)

Press this button to temporarily halt video disc operation. Operation stops at the frame when the pause button is pressed, and no video image is reproduced on the TV set. Pause mode is released by pressing the pause button again.

⑭ AUDIO BUTTONS

These are for selecting an audio reproduction mode.

⑮ CX

Press this button to set the CX noise reduction system to on when reproducing a disc which has been recorded with the CX system.

⑯ POSITION INDICATOR

This indicates the position of the disc where the player is reproducing.

BEFORE OPERATION

OPENING THE LID

The power must be turned on before the REJECT/OPEN button is pressed in order to open the lid. Never try to force the lid open.

REMOVING THE SHIPPING SCREW

To prevent possible damage to the internal mechanism during shipment, a shipping screw is provided on the right of the objective lens, as shown in fig. 10. This screw must be removed before the operation followed on opening the lid. Do not lose this shipping screw. It must be screwed back into the place if you ever need to ship or transport the player in future. How to reinstall the shipping screw is described in page 13.

REMOVING THE LENS CAP

The objective lens is covered with a protective cap to prevent a damage and keep out dust during shipment. (Refer to fig. 10) This lens cap must be removed before operating the player.

Save the lens cap and use it to protect the lens when the player is not in use for a long period of time or when shipping the player.

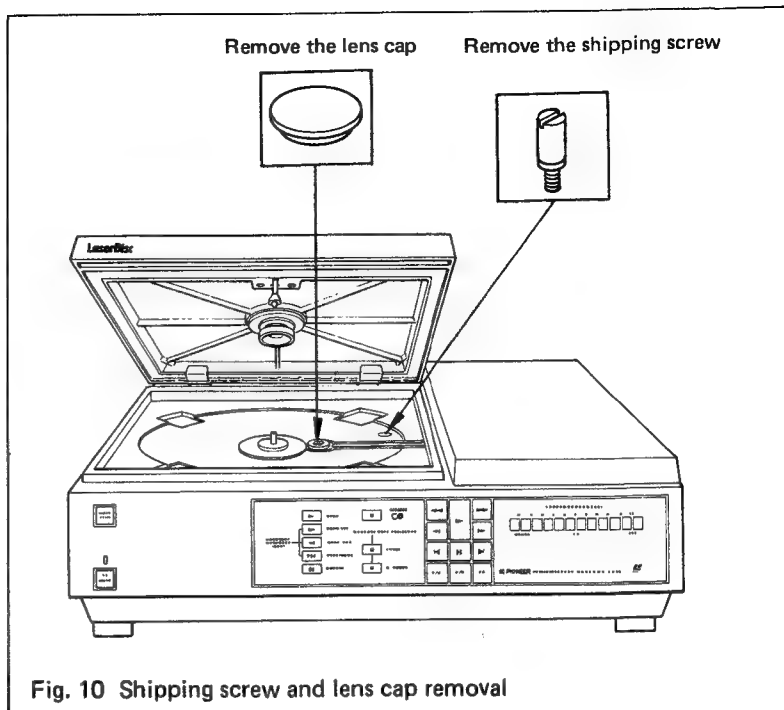


Fig. 10 Shipping screw and lens cap removal

OPERATION

OPENING AND CLOSING THE LID

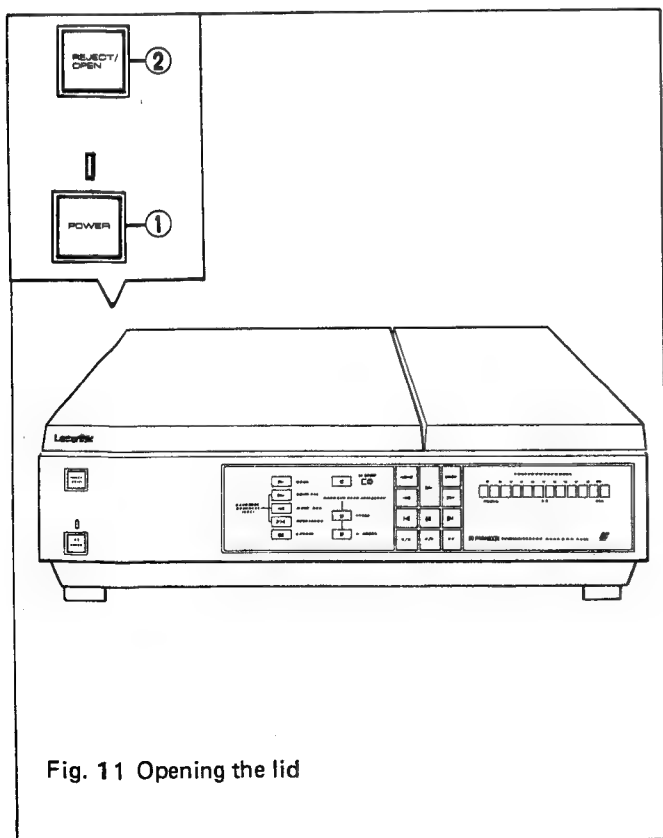


Fig. 11 Opening the lid

- 1) Plug the AC power cord into a standard wall socket, then press the POWER button to turn on the player. (The red indicator above the button will light up.)
- 2) Press the REJECT/OPEN button to release the lid latch.
- 3) Then lift up at the front of the lid to open. Be careful not to force the lid beyond its normal fully open position.
- 4) When closing the lid, push down firmly so that the latch locks securely.

INSERTING AND REMOVING THE VIDEO DISC

- 1) Open the lid as described above.
- 2) With the label of the side you want to play facing up, place the video disc on the turntable. Be sure the center hole of the video disc stays in the convex spindle.
- 3) Shut the lid firmly. The disc clamp on the underside of the lid holds down the video disc magnetically. Then the video disc is ready to be played.
- 4) To remove the video disc, open the lid (as described above), hold the disc by both edges, and lift it off from the turntable. Replace the video disc in its jacket after use.

NOTES:

- Only open the lid when it is necessary to insert and remove the video disc. Otherwise, leave the lid closed to keep out dust and dirt.
- Only one video disc can be inserted at the same time.

STARTING THE PLAYER

- 1) Turn on the power on the player, TV set, and stereo system (if you are reproducing the audio signal through a stereo system).
- 2) As described above, insert a video disc and close the lid. The player will not operate if the lid is not closed completely.
- 3) Turn your TV to the same channel number as the player's rear panel CHANNEL SELECTOR.
- 4) Press the ► marked PLAY button, the play indicator begins blinking. After a few seconds the spindle will reach the rated rotational speed, and the video picture will appear on your TV screen.
- 5) As the video image appears, the play indicator will light up continuously. The player will ordinarily begin video disc reproduction in the play mode from the beginning of the program. And the position indicator will shift to right in relation to the elapsed time of the program.

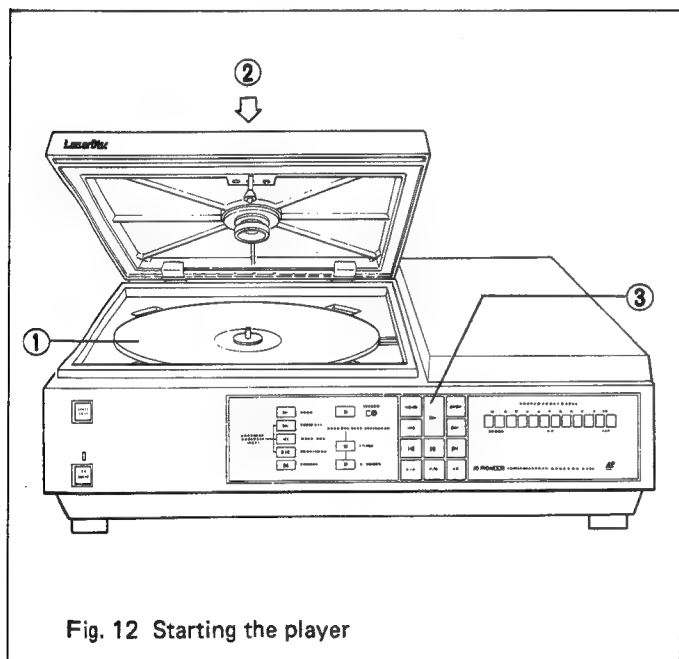


Fig. 12 Starting the player

NOTES:

- The STILL/STEP, SLOW functions do not operate with extended play discs. If one of these buttons is depressed while an extended play disc is being played, the reproduction mode will turn into the pause mode. Press the PAUSE, PLAY or SCAN buttons to get the video image again.
- If you try to operate the player without a disc or if the unrecorded side of a video disc is inserted facing down, spindle rotation will stop automatically.
- When the player is used for the first time, adjust the fine tuning control on your TV set for best picture quality.
- If the player fails to respond to command or continues to exhibit an unusual characteristic, push off the POWER switch. Then start the operation sequence again by pushing the POWER switch followed by PLAY.

STOPPING THE PLAYER

- 1) Press the REJECT/OPEN button. It doesn't matter which function mode the player is in when you press this button.
- 2) The laser pick-up returns to stand by position, and the video disc gradually slows down and stops.
- 3) The lid latch is released by pressing the REJECT/OPEN button after the play indicator stops blinking.
- 4) When commercial TV broadcasting is desired to be seen or the player is not in use, switch off the power of the player.

NOTE:

Whenever finish playing, press the REJECT/OPEN button and remove the disc from the player, return it to the jacket and store it vertically. Do not leave the disc in the player.

AUDIO

All video discs have two audio channels. Both audio channels always turn on when the player's power is turned on, and both audio indicators show the player is in stereo mode.

In special cases, such as bilingual programs, you do not want to reproduce both channels simultaneously, press either the 1/L or 2/R button to select the sound which you want to reproduce.

This will also change the audio indicators to show the reproducing channel.

NOTES:

- Audio reproduction is only possible in the normal play mode.
- When one audio channel is in use, the sound is fed to both audio outputs.

CX NOISE REDUCTION SYSTEM

The CX noise reduction system is used to reduce noise which may be caused during recording of the disc and thus it improves signal-to-noise ratio. When a disc marked with the CX symbol is to be played, press the CX button on the front panel. An indicator light will confirm that the CX decoder is operational.

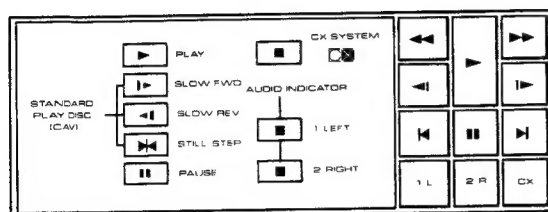
While the CX decoder will significantly improve the dynamic range of a CX disc, the disc can be played without decoding quite satisfactorily. However, discs with no CX symbol should not be played with the CX control on. The function can be disabled by pressing the CX button making sure that the indicator lamp goes out.

PAUSE

Operation is interrupted at the point where you press the PAUSE button (■ marked button), and the picture disappears from the TV screen. The pause indicator lights up. Press the PAUSE, PLAY or SCAN button to get picture again.

SCAN

This is for quickly finding a particular point in the program from which you wish to play the disc. Scanning continues in the forward direction for as long as you keep the ►► marked button depressed. Scanning continues in the reverse direction for as long as you keep the ◀◀ marked button depressed. Audio is not reproduced during scanning. The player returns to the previous mode when you release the SCAN button.



SLOW MOTION (standard play disc only)

Pressing the ►► marked SLOW button will reproduce forward slow motion. Pressing the ◀◀ marked SLOW button will reproduce reverse slow motion. The speed of slow motion video play is about 1/3.6 times that of normal video play.

STILL/STEP (standard play disc only)

Press these button for still reproduction or step-by-step reproduction of a frame. Pressing either button (◀ or ▶ marked button will reproduce a still video image. Then each time you press the ▶ marked button, the image will advance to the next frame. Likewise, each time you press the ◀ marked button, the image will go backwards to the preceding frame.

MAINTENANCE

Cleaning the player

- Use a soft, clean cloth to wipe off dust and dirt accumulated on the player. If necessary, moisten a soft cloth with diluted neutral detergent to remove heavy dirt.
- Never use paint-thinner, benzene, or other solvents. They react with the surface and cause color changes and melting.

Video disc care

- Video discs are made of hard plastic. Use a commercial phonograph record cleaner or soft cloth to lightly wipe off dust and dirt.
- Finger prints and dust on the video disc do not affect the recorded signal. However, excessive dirt may interfere with reproduced picture quality, so it is a good idea to keep the video discs clean.

- Therefore, it is best to handle video discs by the outer edges and center hole only, just as you would do with ordinary phonograph records.
- Always replace discs in their jackets after use. To prevent warping, keep discs away from high temperature and humidity.

Objective lens care

The objective lens is a key part of the player. Note that the lens surface must be clean in order to maintain best performance. Never try to touch the lens surface. Hold the lid closed to keep out dust and dirt unless it is necessary to open for installing and removing a video disc.

If an amount of dust or dirt becomes heavy enough, it may degrade picture quality. Dust can be removed from the lens with an air blower for a camera lens.

SHIPPING SCREW REINSTALLING

When you ship or transport the player, shipping screw must be screwed back to prevent possible damage of internal mechanism during the shipping or transportation. Reinstall the shipping screw according to the following procedure.

- 1) Open the lid, and confirm the threaded hole for the shipping screw.
- 2) If the threaded hole is out of the opening, keep the PLAY button pressing just as the lid is opened.
- 3) As the threaded hole moves to the left hand side, release the PLAY button when the threaded hole comes on center of the opening.

- 4) Screw back the shipping screw into the threaded hole.

NOTES

- Player may give out knock noise if you still keep the PLAY button pressing after the threaded hole has come on center of the opening.
This is nothing to do with the mechanical failure of the player, however, do not keep the PLAY button pressing after the hole has come.
- When you have failed the positioning operation, once shut the lid and keep the PLAY button pressing a while, then retry the positioning operation from first of the above procedure.

PRECAUTIONS

VENTILATION

Slots and openings in the cabinet are provided for ventilation, to ensure reliable operation of the player and to protect it from overheating. These opening must not be blocked or covered. The openings should never be blocked by placing the player on a bed, sofa, rug or other similar surface. The player should not be placed near or over a radiator or heat register. It should not be placed in a built-in installation such as a rack unless proper ventilation is provided or the manufacturer's instructions have been adhered to.

POWER-CORD PROTECTION

- Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the player.
- Always take hold of the plug to unplug it from the power outlet do not unplug it by pulling on the cord. The cord may be damaged if you keep pulling on it.

OVERLOADING

Do not overload wall sockets and extension cords as this can result in the risk of fire or electric shock.

FOREIGN OBJECTS AND LIQUID

Never push objects of any kind into the player through openings as they may contact dangerous voltage areas or other hazards. Be careful not to spill liquid of any kind on the player.

WATER AND MOISTURE

- The player should not be used near water — for example, near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool, etc.
- Do not handle the power cord with wet hands. This is extremely dangerous because you may get an electric shock.
- Moisture forms in the operating sections of the player and the player's performance will be impaired if the player is brought from cool surroundings into a warm room or if the temperature of the room rises suddenly. To prevent this, let the player stand in its new surroundings for about an hour before switching it on, or ensure that the room temperature rises gradually.

LIGHTNING

For added protection for the player during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the antenna or cable system. This will prevent damage to the player due to lightning and power-line surges.

USE NTSC VIDEO DISC

This player is for exclusive use with NTSC color system, please use only NTSC video discs with the universally standardized Laser Vision symbol. The PAL system video disc cannot be used with this player.

DEFECTIVE DISCS

Disc rotation is at an extremely high rate of speed. Consequently, use of defective discs (cracked or severely warped) must be avoided.

TROUBLESHOOTING

Before concluding that the video disc player is out of order, please refer to this trouble-shooting guide to make sure that there is not a simple remedy for the problem. The vast majority of performance problems have their source in set

up errors, bad connections to other equipment, or malfunctions of other equipment (TV, stereo system). Find the trouble symptom on the chart below, and try the suggested remedies.

SYMPTOM	CAUSE	REMEDY
Lid does not open.	<ul style="list-style-type: none"> Power cord is not properly plugged into AC wall socket. Power switch is not turned on. Latch is not released. 	<ul style="list-style-type: none"> Plug in power cord. Turn on power switch. Press REJECT/OPEN button.
Disc does not rotate.	<ul style="list-style-type: none"> Power is not on. Lid is not shut completely. 	<ul style="list-style-type: none"> Plug in power cord. Turn on power switch. Push lid close firmly so latch locks.
Disc stops rotating soon after starting.	<ul style="list-style-type: none"> You are playing the unrecorded side of a disc. 	<ul style="list-style-type: none"> Turn over disc.
Disc rotates but there is no picture.	<ul style="list-style-type: none"> TV is not turned on. Wrong connection from player to TV. TV set is not tuned to channel 3 or 4. Player VHF CHANNEL SELECTOR is at wrong setting. Player is in the PAUSE mode. 	<ul style="list-style-type: none"> Turn on TV. Make correct connections. Set TV to the channel (3 or 4) that is not used for TV broadcasting in your area. Set to same channel. Press the PLAY button.
Picture quality is bad.	<ul style="list-style-type: none"> Bad connections between player and TV set. Player VHF out channel is different from TV channel. TV fine tuning has not been adjusted. Poor disc. 	<ul style="list-style-type: none"> Check all connections, particularly F type plugs. Both TV and player must be set to the same channel (3 or 4) which is not used for TV broadcasting in your area. Adjust TV fine tuning knob for optimum picture quality. Try playing a different disc. If other discs give good quality, the problem is with that particular disc.
TV no longer receives other channels after it has been connected to video disc player.	<ul style="list-style-type: none"> Antenna cable has not been connected. Video disc player is turned on. 	<ul style="list-style-type: none"> Connect VHF antenna cable to antenna terminal on video disc player. To view regular TV broadcasts, remember to turn off the power on the player.
A particular part of a particular video disc is not reproduced properly.	<ul style="list-style-type: none"> Disc is damaged. 	<ul style="list-style-type: none"> Press the SCAN button to skip over damaged portion.

SPECIFICATIONS

General

System and disc spec.

..... Comply with MCA Philips specifications

*1 Maximum playing time

..... Standard play video disc; 30 minutes/side

..... Extended play video disc; 60 minutes/side

Spindle motor revolutions

..... Standard play video disc; 1800 RPM

..... Extended play video disc; 1800 RPM
(inner circumference)

to 600 RPM (outer circumference)

Laser 6328 angstrom, He-Ne 1mW

Video Characteristics

Format NTSC specification

Video output

Level ... 1Vp-p nominal, sync. negative, terminated

Impedance 75 ohms unbalanced

Terminal F type jack

Signal to noise ratio More than 42dB

VHF output

Channel Channel 3 or 4 (switchable)

Level More than 60dB μ (comply with
FCC specifications)

Impedance 75 ohms unbalanced

Terminal F type jack

Audio Characteristics

Audio Output Two channels; stereo or two
individual channels

Level 650mV nominal (1kHz 100% mod.
50 kilohms terminated)

Impedance Less than 1 kilohms unbalanced

Terminal Stereo pinjacks

Total harmonic distortion Less than 0.3%
(1kHz 75% mod.)

Signal to noise ratio More than 70dB
(CX encoded disc, CX NR ON, 1kHz 650mV
output, using IHF A network)

Frequency response .. 40Hz to 20kHz (\pm 3dB reference
to 1kHz 10% mod.)

Functions

Play Normal play mode with sounds

Pause

Scan Forward and reverse

Scan time (90 mm travel) less than 25 sec.

Slow .. Forward and reverse (standard video disc only)

Still/step Still picture; step forward and reverse
(Standard video disc only)

Others

Power requirements

MODEL KU 120V AC 60Hz

MODEL S, S/G 110, 120, 220, 240 VAC
(switchable) 50/60Hz

Power consumption 85 watts

Dimensions 525(W) x 395(D) x 143(H)mm
20-21/32(W) x 15-9/16(D) x 5-5/8(H)in

Net weight (without package) 13.0kg (28.7lbs)

Furnished Accessories

Operating instructions 1

VHF connecting cable with F type plugs 1

Audio connecting cords with pinplugs 1

Antenna adapter (300 ohm-to-75 ohm) 1

Warranty card 1

NOTE:

Specifications and the design subject to possible modification without notice, due to improvements.

**1 Actual playback time differs for each disc.*

LaserDisc is a trademark of Pioneer Electronic Corporation.

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